

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
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In the Matter of )  
 )  
Amendment of Parts 22, 90 and 94 )  
of the Commission's Rules to Permit )  
Routine Use of Signal Boosters )

WT Docket No. 95-70

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**JOINT REPLY COMMENTS OF  
RAM MOBILE DATA USA LIMITED PARTNERSHIP  
AND GEOTEK COMMUNICATIONS, INC.**

RAM Mobile Data USA Limited Partnership ("RMD") and Geotek Communications, Inc. ("Geotek") hereby jointly submit the following reply comments with respect to the Notice of Proposed Rule Making (the "Notice") in the above-captioned proceeding. These reply comments focus exclusively on the use of signal boosters by 900 MHz specialized mobile radio ("SMR") licensees.

RMD and Geotek (the "Joint Commenters") are far and away the two largest 900 MHz SMR operators, and the only 900 MHz SMR licensees that participated directly in this proceeding at the comment phase. As such, while RMD and Geotek arguably have the most to gain from the significant cost savings and enhanced administrative efficiencies that would flow from the routine use of signal boosters in the 900 MHz SMR service, they also have the most to lose from the potential harmful interference these devices could cause if appropriate guidelines for their use are not put in place. It is the intention of the Joint Commenters that, by presenting the Commission with a joint submission (a submission that harmonizes the proposals set forth in the parties' respective comments), the Commission will have a clear sense of a major segment of the 900 MHz SMR industry's views concerning the deployment of signal boosters.

**I. THE RULES SHOULD REFLECT THE FACT THAT THE 900 MHZ SMR  
ENVIRONMENT IS PARTICULARLY WELL-SUITED TO THE USE OF SIGNAL BOOSTERS.**

Unlike those services implicated by this proceeding where frequencies are licensed on a shared basis and/or are only licensed for particular sites, 900 MHz SMR operators are licensed frequencies on an exclusive basis over defined areas. As the American Mobile Telecommunications Association, Inc. ("AMTA") and other parties pointed out, when boosters are deployed in such an environment

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(particularly, as discussed below, narrowband boosters), system capability is enhanced with less risk of interference.<sup>1</sup> Additionally, compared to other services affected by this rule making (even those licensed on a “frequency exclusive/defined service area” basis), 900 MHz SMR is marked by a comparatively “clean” co-channel operating environment, a characteristic that further mitigates the potential for harmful interference.

Thus, while the use of signal boosters by licensees in other services may carry with it a high potential for interference and, therefore, warrant the imposition of substantial operating restrictions, such potential does not exist at 900 MHz. Accordingly, the Joint Commenters urge the Commission to tailor the rules governing deployment of boosters on a service-by-service basis and, in this manner, to refrain from imposing restrictions that might make sense in one service across-the-board to all services.

**II. 900 MHZ SMR LICENSEES SHOULD BE PERMITTED TO  
DEPLOY CLASS A BOOSTERS ON A NEARLY UNRESTRICTED BASIS.**

Nearly every party that addressed the proposal in the Notice to limit the power level of signal boosters to 500 mW urged the Commission to increase that level because 500 mW is insufficient to resolve most frequency coverage problems and does not take into account the fact that manufacturers do not produce devices with such low power levels.<sup>2</sup> The proposed power limitation is particularly inappropriate in the context of the deployment of narrowband (Class A) boosters by 900 MHz SMR operators. Class A boosters amplify only those discrete frequencies intended to be transmitted.<sup>3</sup> Because 900 MHz SMR licensees enjoy exclusive rights to their assigned frequencies within their respective areas of operation, the deployment of Class A boosters by 900 MHz SMR licensees—in accordance with the proposal set forth in the proceeding paragraph—will not cause interference to other users.

Specifically, the Joint Commenters propose that 900 MHz SMR licensees (both existing “incumbent” operators and soon to be licensed MTA-based licensees) be

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<sup>1</sup> Comments of AMTA at 4-5; see also Comments of Motorola, Inc. at 4-5.

<sup>2</sup> See, e.g., Comments of Andrew Corporation at 5. Although Geotek did not address this point in its comments, it now joins RMD in asking the FCC to increase the power levels applicable to boosters.

<sup>3</sup> Notice at Appendix (Proposed Section 90.7).

permitted to deploy Class A boosters (including narrowband booster/translators) on an unrestricted basis within their licensed areas of operation, provided that the use of such boosters does not extend their signals beyond the geographic boundaries within which such signals must be confined in accordance with Part 90 and, provided further, that licensees comply with all applicable Part 90 technical requirements (including emission masking requirements and channel combining).

Power limits applicable to 900 MHz SMR should be roughly equivalent to those applicable to other commercial mobile radio services in which frequencies are licensed on an exclusive basis throughout a defined geographic area. In this regard, the Joint Commenters note that cellular licensees are permitted to deploy repeaters (which the Notice acknowledges are a form of signal booster<sup>4</sup>) at power levels up to 500 watts.<sup>5</sup> As is the case with cellular, restrictive power levels are not required for 900 MHz SMRs to avoid interference from boosters.<sup>6</sup>

Finally, provided that 900 MHz SMR licensees deploy Class A boosters in accordance with the restrictions proposed above, there should be no requirement that licensees notify the Commission or adjacent licensees of such deployment. Because the potential for interference from Class A boosters is so remote, the administrative and financial costs associated with such notification — costs that would be imposed on both licensees and the Commission — are unwarranted.

### **III. ADDITIONAL RESTRICTIONS SHOULD APPLY TO THE DEPLOYMENT OF CLASS B BOOSTERS.**

Most parties recognize that broadband (Class B) boosters are more likely than Class A boosters to cause interference, as such boosters amplify all frequencies received within the booster's passband.<sup>7</sup> The Notice proposes to resolve this interference potential by imposing extremely low power levels on these devices.<sup>8</sup> However, because the power levels are so low, the objective of this rule making — enabling licensees to resolve coverage issues in their licensed service areas — cannot be achieved.

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<sup>4</sup> Id. at ¶ 4.

<sup>5</sup> 47 CFR 22.913(a) and 22.165.

<sup>6</sup> Imposing more restrictive requirements on 900 MHz SMR licensees than are applicable to cellular licensees would contravene important regulatory parity principles.

<sup>7</sup> See, e.g., Comments of AMTA at 6.

<sup>8</sup> Notice at ¶ 8.

While the approach in the Notice may be necessary for some services, the interference potential of Class B devices can be overcome in the 900 MHz SMR context if deployment of such devices is carried out in accordance with the following proposed rule:

"900 MHz SMR licensees may deploy broadband (Class B) boosters at power levels in excess of 500 mW, but not in excess of 3 watts, subject to the following conditions:

(1) deployment is limited to use associated with in-building or other comparably shielded locations (*e.g.*, tunnels and enclosed terrain);<sup>9</sup>

(2) co-channel and adjacent channel users in the area potentially adversely affected by the use of the devices must be notified of their deployment; and

(3) such devices may be operated only on a secondary basis."

Although the power level proposed by the Joint Commenters is higher than that proposed in the Notice, the additional shielding derived from the "in-building" use restriction will virtually eliminate the potential for these boosters to amplify unwanted signals originating from outside the shielded location, thereby substantially reducing the risk of interference. The comparatively "clean" co-channel operating environment at 900 MHz SMR also serves to mitigate the interference potential of broadband boosters. In the unlikely event that interference develops (a result that is plainly not in the interests of the Joint Commenters), operators will be required to cease operations.

#### IV. CONCLUSION.

Signal boosters can serve as an effective and efficient means for 900 MHz SMR licensees to provide fill-in coverage within their respective service areas. The cost savings associated with the use of boosters can be used to extend coverage to outlying areas within an operator's licensed service area, to expand the range of

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<sup>9</sup> That is, retransmitting a signal received from a mobile unit located within a building or other shielded location to a base station located outside of the shielded location. In the case of a building, RMD envisions a 900 MHz SMR licensee deploying a broadband booster inside of the building with an antenna associated with the booster located on top of the building. The use of directional antennas will reduce even further the potential for interference.

services offered over the network, and to lower subscriber fees. Unfortunately, the power levels proposed in the Notice — power levels designed to safeguard against the potential for interference — are so restrictive as to eliminate substantially the significant public interest benefits associated with boosters.

While such restrictive power levels may be necessary to prevent harmful interference in some of the services implicated by this proceeding, these power levels are unwarranted in the context of 900 MHz SMR. Accordingly, the Joint Commenters urge the Commission to adopt the proposals set forth herein, proposals that enable licensees and their subscribers to realize the public interest benefits associated with boosters without incurring the costs related to interference.

Respectfully submitted,

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